

**IN THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A shared memory processor-to-processor mailbox between at least two processors, comprising:

a shared memory accessible by a first processor and a second processor, said shared memory including a first mailbox portion to pass data from said first processor to said second processor, and a second mailbox portion to pass data from said second processor to said first processor, said first mailbox portion and said second mailbox portion both being defined at least in part over common memory addresses;

said first mailbox portion starting at a low physical address end of said shared memory, and addressably filling upward through to a highest physical address of said common memory;

said second mailbox portion starting at said high physical address end of said shared memory, and addressably filling downward through to said lowest physical address of said common memory; and

said first processor having write access to said first mailbox portion and not to said second mailbox portion;

said first processor has read access from both said first mailbox portion and said second mailbox portion while having write access to said first mailbox portion and not to said second mailbox portion; and

said second processor has read access from both said first mailbox portion and said second mailbox portion while having write access to said second mailbox portion and not to said first mailbox portion.

2. (original) The shared memory processor-to-processor mailbox between at least two processors according to claim 1, wherein:

said second processor has write access to said second mailbox portion and not said first mailbox portion.

3. (original) The shared memory processor-to-processor mailbox between at least two processors according to claim 1, wherein:

said first processor has read access to said first mailbox portion and to said second mailbox portion.

4. (original) The shared memory processor-to-processor mailbox between at least two processors according to claim 3, wherein:

said second processor has read access to said first mailbox portion and to said second mailbox portion.

5. (original) The shared memory processor-to-processor mailbox between at least two processors according to claim 1, wherein:

said shared memory is a dual port random access memory.

6. (canceled)

7. (canceled)

8. (currently amended) A method of utilizing a shared memory as a mailbox between two processors, comprising:

providing a contiguous block of shared memory;

allocating first direction messages passed from a first processor to a second processor to a first physical address end of said shared memory;

allocating second direction messages passed from said second processor to said first processor to a second physical address end of said shared memory opposite said first physical address end;

allowing said first direction messages to utilize a dynamically allocated shared central portion of said shared memory addressably filling through to said second physical address end; ~~and~~

allowing said second direction messages to utilize said dynamically allocated shared central portion of said shared memory addressably filling through to said first physical address end;

allowing said first processor read access from both said first direction messages and said second direction messages while having write access to said first direction messages and not to said second direction messages; and

allowing said second processor read access from both said first direction messages and said second direction messages while having write access to said second direction messages and not to said first direction messages.

9. (original) The method of utilizing a shared memory as a mailbox between two processors according to claim 8, further comprising:

assigning a minimum length to said first physical address end.

10. (original) The method of utilizing a shared memory as a mailbox between two processors according to claim 9, further comprising:

assigning a minimum length to said second physical address end.

11. (original) The method of utilizing a shared memory as a mailbox between two processors according to claim 8, further comprising:

reallocating a portion of a minimum length of said first physical address end of said shared memory to enlarge a size of said dynamically allocated central portion utilized by said first processor.

12. (original) The method of utilizing a shared memory as a mailbox between two processors according to claim 11, further comprising:

reallocating a portion of a minimum length of said second physical address end of said shared memory to enlarge a size of said dynamically allocated central portion utilized by said second processor.

13. (currently amended) Apparatus for utilizing a shared memory as a mailbox between two processors, comprising:

shared memory means for providing a contiguous block of shared memory;

means for allocating first direction messages passed from a first processor to a second processor to a first physical address end of said shared memory;

means for allocating second direction messages passed from said second processor to said first processor to a second physical address end of said shared memory opposite said first physical address end;

means for allowing said first direction messages to utilize a dynamically allocated shared central portion of said shared memory addressably filling through to said second physical address end; and

means for allowing said second direction messages to utilize said dynamically allocated shared central portion of said shared memory addressably filling through to said first physical address end

means for allowing said first processor read access from both said first direction messages and said second direction messages while having write access to said first direction messages and not to said second direction messages; and

means for allowing said second processor read access from both said first direction messages and said second direction messages while having write access to said second direction messages and not to said first direction messages.

14. (original) The apparatus for utilizing a shared memory as a mailbox between two processors according to claim 13, further comprising:

means for assigning a minimum length to said first physical address end.

15. (original) The apparatus for utilizing a shared memory as a mailbox between two processors according to claim 14, further comprising:

means for assigning a minimum length to said second physical address end.

16. (original) The apparatus for utilizing a shared memory as a mailbox between two processors according to claim 14, further comprising:

reallocating a portion of a minimum length of said first physical address end of said shared memory to enlarge a size of said dynamically allocated central portion utilized by said first processor.

17. (original) The apparatus for utilizing a shared memory as a mailbox between two processors according to claim 16, further comprising:

means for reallocating a portion of a minimum length of said second physical address end of said shared memory to enlarge a size of said dynamically allocated central portion utilized by said second processor.